

CASE STUDY

PerkinElmer Goes Green with New Boilers

PG&E helps technology provider exceed energy savings goals

PerkinElmer is a global technology provider dedicated to improving the health and safety of people and the environment. With a focus in both human and environmental health, the company offers products and services in areas such as newborn screening, ensuring the safety and efficacy of new drugs, analyzing air and water quality, and testing the safety of food and toys. In keeping with its mission to improve human and environmental health, the company seeks out state-of-the-art measures to reduce its energy consumption, greenhouse gas emissions and carbon footprint in the 150 countries where it has a presence.

Bringing Boilers Up to Date

At its California facility in Santa Clara, PerkinElmer fabricates digital, flat panel X-ray detectors that are used for various medical and industrial applications. This requires continuous boiler operation to provide humidity control for fabrication rooms, as well as hot water and heating for offices.

Joe Batdorf, PerkinElmer's Facilities, Environment, Health and Safety Manager, is responsible for addressing worldwide corporate sustainability goals and for complying with local regulations that govern the facility. He was concerned that the Santa Clara facility's two old boilers had become inefficient. These atmospheric boilers approached the end of their life cycle at the same time that the Bay Area Air Quality Management District upgraded its regulations regarding nitric oxide emissions from boilers.

PerkinElmer contacted Pacific Gas and Electric Company (PG&E) to help evaluate the possibility of replacing the old equipment with condensing boilers. By preheating water entering the boiler with waste heat from flue gases, condensing boilers can achieve greater than 90 percent efficiency, reducing demand on the central heating system as well as decreasing emissions.

PG&E referred the company to one of its third-party partners, Enovity, that administers the Commercial Industrial Boiler Efficiency Program (CIBEP). Under this program, utility partners provide energy audits, site inspections and equipment installation for PG&E customers.

Enovity's engineers assessed PerkinElmer's existing system and found that condensing boilers were a good fit for the facility's needs. Although one piece of equipment in the boiler loop required significantly higher water temperatures than the rest of the system, that equipment could be removed from the boiler loop and supplied with another heating source, lowering the overall heating requirements of the system. Once that was accomplished, replacing the boilers was a straightforward process. Enovity monitored the old system to gather baseline data, installed and inspected the new boilers and monitored the upgraded equipment when the project was complete.

Joe Batdorf said, "Given the estimates of energy savings and projected incentives, the upgrade was an easy decision. The rebate drove us to complete the project."





Savings Results*

- PG&E project incentive: \$69,700
- Project cost: \$243,000
- Annual gas savings: 69,700 therms
- Average payback period: 2.5 years

More Gas Savings with HVAC

After completing the boiler retrofit project, PerkinElmer completed a retrocommissioning project that further increased the facility's energy efficiency by optimizing the operation of the reheat coils in their heating, ventilation, and air conditioning (HVAC) system. Sensors installed on the system's reset controls constantly monitor the supply air temperature and cool it only when necessary, thereby reducing the amount of energy required to handle air drawn into the facility from the outside.

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– JOE BATDORF, FACILITIES, ENVIRONMENT, HEALTH AND SAFETY MANAGER, PERKINELMER

Results

PerkinElmer invested \$198,000 to install the new condensing boilers which exceeded the company's annual therm savings estimates by 14% (50,700 therms saved each year). With an incentive of more than \$50,000 from PG&E, they achieved payback within 2.9 years. It also saved the company the cost of retrofitting the old boilers to achieve compliance with the new nitric oxide air emission requirements.

The reheat coil optimization project, which cost just over \$45,000, resulted in an additional 19,000 therms saved per year and another \$19,000 PG&E incentive for PerkinElmer. This incentive allowed the company to achieve a return on their investment in less than two years.

The gas savings projects also helped the company advance its goal of achieving a 10 percent reduction in its global greenhouse gas emissions by 2013. Together the projects keep over 339 tons of carbon emissions out of the atmosphere every year, the equivalent of taking 57 passenger cars off of the road.



How to Get Started

To learn more about the Commercial Industrial Boiler Efficiency Program (CIBEP) and other PG&E programs to help your company manage energy consumption and reduce costs, contact your PG&E Account Representative, call our Business Customer Service Center at 1-800 468-4743, or visit www.pge.com/biotech.

*Savings results represent customer's totals from 2010.

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